SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS

OFFEROR TO COMPLETE BLOCKS 12,17,23,24 & 30

1. REQUISITION NUMBER	PAGE 1 OF
5000019166	12

2. CONTRACT NO.	3.AWARD/EFFECTIVE DATE	4. ORDER NUMBER	5. SOLICITATION NUMBER	6. SOLICITATION ISSUE DATE
			EP2248-06	08/31/2006

7. FOR SOLICITATION INFORMATION CALL:	a. NAME	b. TELEPHONE NUMBER *(No collect calls)*	8. OFFER DUE DT/LOCAL TIME
	Teresa J. Begley	859-253-9215	09/11/2006 2:00PM

9. ISSUED BY CODE

Lexington Cable
UNICOR, FPI
Lexington, KY 40511

10. THIS AQUISITION IS
- [X] UNRESTRICTED
- [ ] SET ASIDE0 % FOR
  - [ ] SMALL BUSINESS
  - [ ] SMALL DISADV.BUSINESS
  - [ ] 8(A)

SIC: 3357

11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED
- [ ] SEE SCHEDULE

12. ~~DISCOUNT TERMS~~ Net 30

- [X] 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)

13b. RATING
DX

14. METHOD OF SOLICITATION
- [ ] RFQ [ ] IFB [X] RFP

15. DELIVER TO CODE

UNICOR Federal Prison Industries
BLDG 601 Warehouse Road
BIG SPRING, TX 79720-7789
USA

16. ADMINISTERED BY CODE

Lexington Cable
UNICOR, FPI
Lexington, KY 40511

17a. CONTRACTOR/OFFEROR CODE 999999999 FACILITY CODE

-
-
-, DC

TELEPHONE NO. TIN:

REQ: 6200004815

- [ ] 17b. CHECK IF REMITANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER

18a. PAYMENT WILL BE MADE BY CODE

UNICOR FPI Central Acct Payable
P. O. Box 4000
BUTNER, NC 27509-4000,
USA

18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED [ ] SEE ADDENDUM

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	See Section B				

25. ACCOUNTING AND APPROPRIATION DATA

26. TOTAL AWARD AMOUNT *(For Govt. Use Only)*

- [X] 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA [X] ARE [ ] ARE NOT ATTACHED
- [ ] 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA [ ] ARE [ ] ARE NOT ATTACHED

28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 1 COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET [X] FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.

29. AWARD OF CONTRACT: REFERENCE _____ OFFER DATED _____. YOUR OFFER ON SOLICITATION (BLOCK 5), [X] INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HERIN, ACCEPTED AS TO ITEMS:

30a. SIGNATURE OF OFFEROR/CONTRACTOR

X

31a. UNITED STATES OF AMERICA *(SIGNATURE OF CONTRACTING OFFICER)*

30b. NAME AND TITLE OF SIGNER *(TYPE OR PRINT)*	30c. DATE SIGNED
X	X

31b. NAME OF CONTRACTING OFFICER *(TYPE OR PRINT)*	31c. DATE SIGNED
Teresa J. Begley 859-253-9215	09/01/2006

32a. QUANTITY IN COLUMN 21 HAS BEEN
- [ ] RECEIVED [ ] INSPECTED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

32b. SIGNATURE OF AUTHORIZED GOVT. REPRESENTATIVE	32c. DATE

41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT

41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER	41c. DATE

33. SHIP NUMBER	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR
[ ] PARTIAL [ ] FINAL		

36. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL

37. CHECK NUMBER

38. S/R ACCOUNT NUMBER	39. S/R VOUCHER NUMBER	40. PAID BY

42a. RECEIVED BY *(Print)*

42b. RECEIVED AT *(Location)*

42c. DATE REC'D *(YY/MM/DD)*	42d. TOTAL CONTAINERS

Terms of delivery: DST

TERMS OF DELIVERY IS F.O.B. DESTINATION, TO:

UNICOR, Federal Prison Industries
1900 Simler Avenue
Big Spring, TX 79720 and

UNICOR, Federal Prison Industries
Route 37
Danbury, CT 06811-3099

Solicitation is issued as a Request for Proposal for a FIVE (5) year, Requirements type contract with Economic Price Adjustment Modified to 3 months for Iron and Steel/Metals and Metal Products WPU10150801 and Copper and Copper Alloy Products WPU10260314.

SOLICITATION IS UNRESTRICTED.

THE GOVERNMENT ANTICIPATES AN ALL OR NONE AWARD TO THE BEST EXTENT POSSIBLE. IF THIS IS NOT WITHIN THE GOVERNMENT'S BEST INTEREST, AWARD WILL BE MADE AT A MAXIMUM OF (1) WIRE: ALL OR NONE; (2) CABLE: ALL OR NONE; (3) BRAID: ALL OR NONE; AND (4) FERRULES: ALL OR NONE. THE NUMBER OF AWARDS WILL BE AT THE DESCRETION OF THE CONTRACTING OFFICER AND WILL BE WITHIN THE BEST INTEREST OF THE GOVERNMENT.

DATES OF IMPORTANCE:

1. UNPRICED PROPOSALS ARE DUE ON MONDAY, 9/11/06 AT 2:00 P.M. EST

2. PRACTICE REVERSE AUCTION WILL BE HELD ON TUESDAY, 9/12/06 AT 1:00 P.M. EST.

3. LIVE REVERSE AUCTION WILL BE HELD ON WEDNESDAY, 9/13/06 AT 1:00 P.M. EST.

ITEM #19, FRL0359 IS TO BE PROVIDED BY A QPL MANUFACTURER. YOU ARE REQUIRED TO LIST THE QPL MANUFACTURER YOU ARE QUOTING IN LINE ITEM #19.

For a list, description and total estimated quantities of all items, reference Section B.

MINIMUM DELIVERY ORDER BUYS:
ITEMS #1 THRU 18: 250 FEET PER LINE ITEM
ITEMS #19: 500 EACH PER LINE ITEM

MAXIMUM DELIVERY ORDER BUYS:
ITEMS #1 THRU 18: 5000 FEET PER LINE ITEM
ITEMS #19: 10,000 EACH PER LINE ITEM

CABLE AND WIRE ARE TO BE SUPPLIED IN CONTINUOUS LENGTHS WITH NO BREAKS OR SPLICES IN THE SPOOLS.

Required delivery shall be 90 days or sooner ARO. Delivery orders will be issued in accordance with 52.216-19.

Completed ACH forms must be submitted with offer unless vendor has updated ACH information currently on file with UNICOR.

Vendor's Email Address (Required): _____

Vendors DUNS Number (Required): _____

INVOICES ARE TO BE MAILED TO:
UNICOR, Federal Prison Industries
Central Accounts Payable
P.O. Box 4000
Butner, NC 27509-4000
ATTN: Darryl Sharkey, CAP Acct. Supervisor
PH: 1-866-550-9823
FX: 1-866-550-9801

Administrative Contracting Officer is Teresa J. Begley at 859-253-9215.

*

SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS

Item No.	SUPPLIES OR SERVICES	Quantity	U/M	UNIT PRICE	AMOUNT IN US$	PR Number	Del.Date
00001	WIR0590	215,000.000	FT			5000019166	

*M,16878/4-BGE2,6145000625699

*

00002	WIR0592	215,000.000	FT			5000019166	

*M,16878/4-BGE4,6145008173597
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00003	WIR0597	322,500.000	FT			5000019166	

M,16878/4-BFE9,6145000625700
UNICOR PART NO: WIR0597
DESCRIPTION: WIRE
MILITARY PART NO: M16878/4BFE9
PROCUREMENT SPEC: MIL-W-16878/4C
QPL REQUIRED: NO
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00004	WIR0610	645,000.000	FT			5000019166	

M,16878/4-BEE0,6145000595602
UNICOR PART NUMBER: WIR0610
DESCRIPTION: WIRE
MILITARY PART NO: M16878/4BEE0
PROCUREMENT SPEC: MIL-DTL-16878,REV.G
QPL REQUIRED: YES
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS

Item No.	SUPPLIES OR SERVICES	Quantity	U/M	UNIT PRICE	AMOUNT IN US$	PR Number	Del.Date
00005	WIR1257	215,000.000	FT			5000019166	

*M,16878/4-BFE92,6145010462154
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00006	WIR1329	322,500.000	FT			5000019166	

M,16878/4-BFE1,6145008173609
UNICOR PART NUMBER: WIR1329
DESCRIPTION: WIRE
MILITARY PART NUMBER: M16878/4BFE1
PROCUREMENT SPEC: MIL-W-16878/4C
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00007	WIR1356	322,500.000	FT			5000019166	

*M,16878/4-BGE0,6145000626686
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00008	WIR1430	430,000.000	FT			5000019166	

M,16878/4-BJE2,6145013693999,16AWG,RED
UNICOR PART NO: WIR1430
DESCRIPTION: WIRE
MILITARY PART NO: M16878/4-BJE2
PROCUREMENT SPEC: MIL-W-16878/4C
QPL REQUIRED: NO
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00009	WIR1431	430,000.000	FT			5000019166	

M,16878/4-BJE0,6145003471171
UNICOR PART NUMBER: WIR1431
DESCRIPTION: WIRE
MILITARY PART NUMBER: M16878/4BJE0
PROCUREMENT SPEC: MIL-W-16878/4C
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00010	WIR1721	215,000.000	FT			5000019166	

M,16878/4-BJE4,6145006885402
UNICOR PART NUMBER: WIR1721
DESCRIPTION: WIRE
MILITARY PART NUMBER: M16878/4BJE4
PROCUREMENT SPEC: MIL-W-16878/4C
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS

Item No.	SUPPLIES OR SERVICES	Quantity	U/M	UNIT PRICE	AMOUNT IN US$	PR Number	Del.Date
00011	WIR2745	215,000.000	FT			5000019166	

M,16878/4-BEE97,6145004506401
UNICOR PART NO: WIR2745
DESCRIPTION: WIRE
MILITARY PART NO: M16878/4BEE97
PROCUREMENT SPEC: MIL-W-16878/4C
QPL REQUIRED: NO
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00012	BRD0033	752,500.000	FT			5000019166	

*A-A-59569R36T0500,6145002209660
PROCUREMENT SPEC: A-A-59569
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00013	CBL2918	215,000.000	FT			5000019166	

M,27072/94LDDE1,CABLE
VERIFIED-PER-MIL-C-27072B
UNICOR PART NUMBER:CBL2918
DESCRIPTION:CABLE
MILITARY PART NUMBER:M27072/94LDDE-1
PROCUREMENT SPEC.MIL-C-27072-B,SUPP1
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00014	CBL2919	215,000.000	FT			5000019166	

M,27072/94LDDE3
VERIFIED-PER-MIL-C-27072B
UNICOR PART NUMBER:CBL2919
DESCRIPTION:CABLE
MILITARY PART NUMBER:M27072/94LDDE-3
PROCUREMENT SPEC.MIL-C-27072-B,SUPP1
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00015	CBL2920	215,000.000	FT			5000019166	

M,27072/94LDDE4,CABLE
VERIFIED-PER-MIL-C-27072B
UNICOR PART NUMBER:CBL2920
DESCRIPTION:CABLE
MILITARY PART NUMBER:M27072/94LDDE-4
PROCUREMENT SPEC.MIL-C-27072-B,SUPP1
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS

Item No.	SUPPLIES OR SERVICES	Quantity	U/M	UNIT PRICE	AMOUNT IN US$	PR Number	Del.Date
00016	CBL2921	215,000.000	FT			5000019166	

M,27072/94LDDE5,CABLE
VERIFIED-PER-MIL-C-27072B
UNICOR PART NUMBER:CBL2921
DESCRIPTION:CABLE
MILITARY PART NUMBER:M27072/94LDDE-5
PROCUREMENT SPEC.MIL-C-27072-B,SUPP1
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00017	CBL2922	215,000.000	FT			5000019166	

M,27072/94LDDE6
VERIFIED-PER-MIL-C-27072B
UNICOR PART NUMBER:CBL2922
DESCRIPTION:CABLE
MILITARY PART NUMBER:M27072/94LDDE-6
PROCUREMENT SPEC.MIL-C-27072-B,SUPP1
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00018	CBL2923	215,000.000	FT			5000019166	

M,27072/94LDDE9,22AWG,WHITE,CABLE
VERIFIED-PER-MIL-C-27072B
UNICOR PART NUMBER:CBL2923
DESCRIPTION:CABLE
MILITARY PART NUMBER:M27072/94-LDDE-9
PROCUREMENT SPEC.MIL-C-27072-B,SUPP1
EACH SPOOL MUST BE ONE CONTINUEOUS LENGTH WITH NO SPLICING.

*

00019	FRL0359	1,290,000	EA			5000019166	

*SAE-AS83519/1-3,5940011357077
MILITARY PART NO: SAE-AS83519/1-3
PROCUREMENT SPEC: SAE-AS83519/1C
QPL REQUIRED: YES
Vendor_Mat.: FRL0359 SAE-AS83519/1-3,59400113570
PACKAGING IN MULTIPLES OF 100'S.

QPL SOURCE QUOTING: (REQUIRED)

*

PLEASE READ THIS SOLICITATION IN ITS ENTIRETY

This is a combined synopsis/solicitation for commercial items prepared in accordance with the format in Subpart 12.6 as supplemented with additional information included in this notice. This announcement constitutes the only solicitation; offers are being requested and a written solicitation will not be issued. The solicitation number is EP2248-06, and this solicitation is issued as a Request For Proposal (RFP). The solicitation document and incorporated provisions and clauses are those in effect through Federal Acquisition Circular 2005-12. The North American Industry Classification System code is 335931 (Electronic Cable Manufacturing). UNICOR, Federal Prison Industries, Inc., intends to enter into a FIVE (5) year, firm-fixed price, Requirements type contract with economical price adjustment for Iron and Steel/Metals and Metal Products WPU10150801 and Copper and Copper Alloy Products WPU102690314 for commercial items, cable, wire, braid and ferrules.

For item description and total estimated quantities of all 19 line items, reference Section B.

MINIMUM DELIVERY ORDER BUYS:
ITEMS #1 THRU 18: 250 FEET PER LINE ITEM
ITEMS #19: 500 EACH PER LINE ITEM

MAXIMUM DELIVERY ORDER BUYS:
ITEMS #1 THRU 18: 5000 FEET PER LINE ITEM
ITEMS #19: 10,000 EACH PER LINE ITEM

CABLE AND WIRE ARE TO BE SUPPLIED IN CONTINUOUS LENGTHS WITH NO BREAKS OR SPLICES IN THE SPOOLS.

ITEM #19 IS TO BE SUPPLIES IN PACKAGING OF 100'S.

DRAWINGS ARE ATTACHED TO THE SOLICITATION PACKAGE AND WILL NOT BE AVAILABLE BY ANY OTHER MEANS.

SOLICITATION IS UNRESTRICTED.

THE GOVERNMENT ANTICIPATES AN ALL OR NONE AWARD TO THE BEST EXTENT POSSIBLE. IF THIS IS NOT WITHIN THE GOVERNMENT'S BEST INTEREST, AWARD WILL BE MADE AT A MAXIMUM OF (1) WIRE: ALL OR NONE; (2) CABLE: ALL OR NONE; (3) BRAID: ALL OR NONE; AND (4) FERRULES: ALL OR NONE. THE NUMBER OF AWARDS WILL BE AT THE DESCRETION OF THE CONTRACTING OFFICER AND WILL BE WITHIN THE BEST INTEREST OF THE GOVERNMENT.

Required delivery shall be 90 days or sooner ARO. Delivery orders will be issued in accordance with 52.216-19.

This is for a "DOA7" rated contract.

NO INCREMENTAL PRICING WILL BE ALLOWED. NO DEVIATIONS OR SUBSTITUTIONS FROM THE SPECIFICATIONS/DRAWINGS WILL BE ALLOWED.

Shipments against delivery orders MUST be complete. (NO SHORTAGES)

Future line items within these mil series, as well as additional cable factories, may be added to the contract if prices are determined to be fair & reasonable.

The following FAR clauses and provisions apply to this acquisition:

52.204-6, Contractor Identification Number Data Universal Numbering System (DUNS);

52.211-14, Notice of Priority Rating for National Defense Use;

52.211-15, Defense Priority and Allocation Requirements;

52.212-1, Instructions to Offerors-Commercial Items;

52.211-16, Variation in Quantity- The variation shall be limited to 0% decrease and 5% increase for items # 1 thru 19 only;

52.212-2, Evaluation - Commercial Items, significant evaluation factors are (a) past performance and (b) price. Past performance is significantly more important than price. Delivery, quality and customer service will be evaluated under past performance.

52.212-3 Offeror Representations and Certifications - Commercial Items (MAR 05)

IAW FAR 4.1201(a), Prospective contractors shall complete electronic annual representations and certifications at http://orca.bpn.gov in conjunction with required registration in the Central Contractor Registration (CCR) database (see FAR 4.1102)(b) Prospective contractors shall update the representations and certifications submitted to ORCA as necessary, but at least annually, to ensure they are kept current, accurate, and complete. The representations and certifications are effective until one year from date of submission or update to ORCA. To make a change that affects only one solicitation, contractors are required to complete the appropriate sections of FAR 52.212- 3(j) or 52.204-8 whichever is included in the solicitation.

52.212-4, Contract Terms and Conditions - Commercial Items
(OCT 2003) Deviation - This contract is not subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613). Disputes arising under or relating to this contract shall be resolved in accordance with clause FAR 52.233-1 Disputes (JUL 2002) (DEVIATION), which is incorporated herein by reference. The Contractor shall proceed diligently with performance of this contract, pending final resolution of any dispute arising under the contract. To view the full text clause FAR 52.233-1 Disputes (JUL 2002)(DEVIATION), go to www.unicor.gov select Business Opportunities, then select Deviation."

52.212-5, Contract Terms and Conditions Required to Implement Statues or Executive Orders - Commercial Items, (APR 2005) which includes: 52.203-6, Restrictions on Subcontractor Sales to the Government, with Alternate I; 52.232-33, Payment of Electronic Funds Transfer - Central Contractor Registration; 52.233-3 Protest After Award; 52.233-4 Applicable Law for Breach of Contract Claim;

52.216-18, Ordering, orders may be issued under the resulting contract from the date of award through five (5) years thereafter;

52.216-19, Order Limitation, (a) minimum delivery order for items #1 thru 18 is 250 feet per line item and for item #19 is 500 each per line item; b) maximum delivery order for items #1 thru 19 is 5000 feet per line item and for item #19 is 10,000 each per line item; contractor will not be obligated to honor an order in excess of 90,000 feet for the maximum order quantity for items # 1 thru 19 and 10,000 each for the maximum order quantity for item #19. Contractor will not be obligated to honor a series of orders from the same ordering office, within a 10 day period, that together call for quantities exceeding the maximum order limitations. However, the contractor shall honor orders exceeding the maximum order limitations unless the order(s) are returned to the ordering office within seven (7) calendar days after issuance with a written statement expressing the contractors intent not to ship;

52.216-21, Requirements (Oct 1995), applies until 90 calendar days after contract validity end date;

52.232-18, Availability of Funds;

52.246-1, Contractor Inspection Requirement;

CLAUSE A: "The vendor shall furnish the original certificate of conformance, signed by the person who has certification authority (title and position), with the original invoice. A copy of the certificate of conformance and the packing slip shall accompnay each shipment. The furnishing of a certificate of conformance shall be a condition of acceptance at destination, and payment shall not be made until it is received. Inspection and acceptance shall be at destination by FPI."

INVOICES ARE TO BE MAILED TO:
UNICOR, Federal Prison Industries
Central Accounts Payable
P.O. Box 4000
Butner, NC 27509-4000
ATTN: Darryl Sharkey, CAP Acct. Supervisor
PH: 1-866-550-9823
FX: 1-866-550-9801

52.247-34, F.O.B. Destination (NOV 1991),

REVERSE AUCTION PROCEDURES

I. GENERAL
For the purpose of expediting price related discussions, the Contracting Officer has opted to conduct a competitive, anonymous, on-line reverse auction using Global eProcure. UNICOR has contracted with Global eProcure to conduct the reverse auction for this solicitation. HOWEVER, THE ON-LINE REVERSE AUCTION SHALL NOT BE CONSTRUED TO IMPLY THAT THIS SOLICITATION IS BEING CONDUCTED UNDER THE PROCEDURES SET FORTH AT FAR PART 14, SEALED BIDDING. Rather, this solicitation is being conducted under the procedures set forth at FAR Part 12, Acquisition of Commercial Items, in conjunction with the policies and procedures for solicitation, evaluation, and award prescribed in FAR Part 15, Contracting by Negotiation.

During the auction, Offerors will provide pricing through submission of electronic offers via the Global eProcure website. The primary pricing competition for this solicitation will be through the online reverse auction. Global eProcure will explain this process in detail and train each qualified offeror prior to the reverse auction through a simulated reverse auction. Qualified Offerors will have the ability to submit revised pricing during the auction in response to prices submitted by other offerors. The identity of offerors will not be revealed to each other during the auction. The final such revision during the auction will be considered the Offerors final proposal. The Contracting Officer reserves the right to conduct verbal or written discussions with respect to factors other than price with the Offerors at anytime prior to award.

Only offerors that have been determined qualified will be permitted to participate in the auction. Offerors who are deemed not qualified will be notified by the Contracting Officer. QUALIFIED OFFERORS WILL BE CONTACTED DIRECTLY BY GLOBAL EPROCURE VIA E-MAIL REGARDING PARTICIPATION IN THE REVERSE AUCTION. THE CONTACT AT GLOBAL EPROCURE WILL BE RINKI SINGH, (732) 382-6565 ext. 1034 , E-MAIL: rinki.singh@globaleprocure.com.
OFFERORS ARE NOT TO SUBMIT PRICING WITH THEIR INITIAL PROPOSALS. Offerors should submit all the required information stated below, except for pricing, by the deadline for submissions on Monday, September 11, 2006 at 2:00 AM EST. Pricing will only be accepted through the reverse auction.

II. TRAINING OF OFFERORS
Global eProcure will train designated employees for each offeror using real time mock auctioning to familiarize the offeror's employees with the online auctioning system. Detailed bidding, event guidelines and directions will be

e-mailed to interested offerors prior to the practice and the live bidding event. The date and time of the practice reverse auction will be on Tuesday, September 12, 2006 @ 1:00 PM Eastern Standard Time.

III. REVERSE AUCTION: THE AUCTION

a. During the reverse auction, offerors may revise their initial pricing proposal through submission of electronic offers during the anonymous reverse auction. This reverse auction shall constitute discussions with the offerors. The final such revision during the reverse auction will be considered the offerors Final Revised Proposal.

b. The Contracting Officer reserves the right to suspend or cancel the reverse auction at any time. If the Contracting Officer cancels the reverse auction, Final Revised Proposals will be requested by an amendment to the solicitation.

c. Notwithstanding FAR 52.215-5, offerors will submit revised pricing only through the online mechanism supplied by Global eProcure. Offerors will not submit revised pricing via any other mechanism including but not limited to post, courier, fax, E-mail, or orally unless specifically requested by the Contracting Officer.

d. The reverse auction bidding period shall be set by the Contracting Officer as indicated in Section IV, paragraph (a). Electronic offers shall be submitted by offerors during the reverse auction period. The reverse auction is designed to extend the closing time of a bidding lot if there are any bids placed in the final 2 minutes of the bidding lot. If a bid is placed within the last 2 minutes of the closing time, the time period shall be extended for two additional minutes beyond the scheduled closing.

e. Any offeror experiencing difficulties during a reverse auction must notify Global eProcure immediately. Difficulties. include any event or problem, which interferes with the offerors ability to participate in the reverse auction and may include, but is not limited to: data entry errors, software problems, or hardware problems. Offerors will have five minutes after a Lot goes into "Verifying" status to notify Global eProcure of any problems. If the Contracting Officer judges that any offeror has been disadvantaged by a problem, they may direct Global eProcure to address the problem and return the Lot to "Open" status.

f. Any and all offeror contact with Global eProcure is for the sole purpose of facilitating the reverse auction and shall not be considered discussions with the offeror within the meaning of FAR Part 15.

g. For purposes of FAR 52.203-2, and in accordance with subparagraph (c) thereof, submission of a proposal by the offeror shall be considered certification by the Offeror that the only knowing disclosure by the offeror of its prices to any other offeror will be during the reverse auction. The offeror further certifies that disclosure by the offeror of its prices during the reverse auction shall not be for the purposes of restricting competition.

h. UNICOR reserves the right to reject any or all quotes received for any or all lots.

IV. AUCTION RULES

a. The date and time of the practice reverse auction will be Tuesday, September 12, 2006 at 1:00 PM Eastern Standard Time. The date and time of the Live Reverse Auction will be Wednesday, September 13, 2006 at 1:00 PM Eastern Standard Time. The reverse auction shall be designated as REVERSE AUCTION # EP2248-06. The reverse auction shall commence at 1:00 P.M. EASTERN STANDARD TIME.

b. Only qualified Offerors will be permitted to submit electronic quotes through the reverse auction. Quotes that Offerors submit through the reverse auction are legally binding quotations without qualification. Quotes may not be cancelled or withdrawn except for data entry errors. Contractors must submit their quotes through the online bidding mechanism supplied by Global eProcure and not through any other mechanism including but not limited to post, courier, fax, e-mail, or orally.

JAR 2852.201-70
CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR) (JAN 1985)

(a) Gene Aiello is hereby designated to act as Contracting Officers Technical Representative (COTR) under this contract for line items #0001 thru #0019; (b) The COTR is responsible, as applicable, for: receiving all deliverables, inspecting and accepting the supplies or services provided hereunder in accordance with the terms and conditions of this contract; providing direction to the contractor which clarifies the contract effort, fills in details or otherwise serves to accomplish the contractual Scope of Work; evaluating performance; and certifying all invoices/vouchers for acceptance of the supplies or services furnished for payments.
(c) The COTR does not have the authority to alter the contractor's obligations under the contract, and/or modify any of the expressed terms, conditions, specifications, or cost of the agreement. If as a result of technical discussions, it is desirable to alter/change contractual obligations or the Scope of Work, the Contracting Officer shall issue such changes in writing and signed.

Local Clause FPI 100H1 Economic Price Adjustment (Modified 6/06)(Modified version used for volatile markets such as brass/copper)

Three (3) months after contract award date, and every three (3) months thereafter, contract prices for items listed in the schedule under Section B, may be adjusted in accordance with the change in the Producer Price Index for Iron and Steel/Metals and Metal Products WPU10150801 and Copper and Copper Alloy Products Producer Price Index Series: WPU10260314. The base price at the time of award of contract may fluctuate upward or downward according with price adjustment proportionate increases or decreases as a result of the market survey. It is the contractors responsibility to request this upward or downward adjustment. Adjustment may be requested 30 calendar days before to 30 calendar days after eligible adjustment date. Requests made outside those time frames may not be be honored and the contract pricing will remain unchanged unless unusual and compelling market data for request is submitted.

All downward price adjustments will be retroactive to the authorized adjustment data as specified in this clause. If the downward price adjustments are not requested and this is later revealed through audits or otherwise, the contractor shall reimburse the government and the amount overcharged plus interest. Interest will be computed at the rate set annually by the Secretary of the Treasury for late contract payment. Interest will be accrued from the date of adjustment should have been made.

The Contractor shall submit any request for adjustment in writing to the contracting officer. Request should include a copy of the relevant consumer price index and must be within the allowed time period for adjustment. The date the completed request is received by the contracting officer will be effective, date of any changes in price.

In computing any contract price adjustment, a comparison of same or similar work being performed will be compared with the market survey data collected by UNICOR, as of the date of adjustment. No adjustment shall be made if the referenced change is less than 2%. The total upward adjustment for the contract period, including any option periods, shall not exceed 10%, unless a higher increase is supported by the market conditions at that time, based on the original or option period contract price. Downward adjustments are not limited. Indices are available from the Bureau of Labor Statistics, 600 E Street N.W., Washington, DC 20212, telephone 202-606-7706.

PLEASE PROVIDE THE REQUIRED INFORMATION BELOW OR YOU MAY NOT BE CONSIDERED FOR AWARD!

UNPRICED PROPOSAL SUBMISSION REQUIREMENTS: Each unpriced proposal package shall consist of the following completed and signed documents: SF1449, all amendments issued, three Business Management Questionaires (references) with recent and relevant contracts for the same or similar items iaw FAR 52.212(b)(10) for past performance evaluation, a completed copy of FPI 1000K2 Subcontract Certification (large businesses only) and an ACH form. A completed ACH form must be submitted with each solicitation package prior to contract award.

Implementation of the Central Contractor Registration (CCR) was mandated effective October 1, 2003. ALL contractors MUST register in the CCR prior to award and remain registered on CCR through final payment. For additional information and to register, go to www.ccr.gov.

ALL contractors MUST register with the Contractor Performance System (CPS) at time of award. This site will be used to input and store contractor performance. Go to website: http://cps.od.nih.gov. Click on hypertext Registration for Existing contractors listed under the column labeled Contractor Information. Read the information provided on the page and click the hypertext, https://cpscontractor.nih.gov/. This will put you at the login screen of the Contractor Performance System. On the right hand side of screen you will see the question, Registered to the NEW CPS yet? Click here to start process under the word BULLETINS. Click the word #here# which is in hypertext format. Enter the required information to register. If you have any questions, contact CPS support at cps-support-1@list.nih.gov or Jo Ann, Paulette, or Alex at (301)451-2771.

Vendors shall submit signed and dated unpriced proposals by fascimile to 859-253-0022 of 859-259-0149 to the attention of Teresa J. Begley, Contracting Officer. No hand delivered mail will be accepted at this time due to security precautions. Any of the express mail carriers will be accepted with delivery to: UNICOR, Federal Prison Industries Lexington, 3301 Leestown Road, Lexington, KY
40511, Attn: Teresa J. Begley. Offers should be submitted on the SF1449.

OMB Clearance 1103-0018.

The date and time for receipt of unpriced proposals is Monday, September 11, 2006, at 2:00 PM Eastern Standard Time. Offer must indicate Solicitation No. EP2248-06, time specified for receipt of offer, name, address and telephone number of offeror, terms of any expressed warranty, and any discount terms. Offer must include signed acknowledgment of all amendments, if any.

All offers that fail to complete current representations and certifications maintained @ orca.bpn.gov, past performance information or reject the terms and conditions of the solicitation may be excluded from consideration.

Award(s) will be based on the best value to the Government with past performance significantly more important than price.

Any amendments hereby issued to this solicitation shall be synopsized in the same manner as this solicitation and must be acknowledged by each offeror. Offeror must hold prices firm for 60 calendar days from the date specified for receipt of offers. Offers or modifications to offers received at the address specified for the receipt of offers after the exact time specified may not be considered.

All FAR forms, clauses and provisions necessary to submit an offer may be accessed at the following web site: http://www.arnet.gov/far. This combined synopsis/solicitation and necessary forms are available on www.fedbizopps.gov or UNICORs web site: http://www.unicor.gov/fpi_contracting/about_procurement/forms/. 1st and 3rd forms are required. (ACH Form and Business Questionnaire Form)

Questions regarding this requirement may be addressed in writing only to Teresa J. Begley, Contracting Officer at tbegley@central.unicor.gov.

See Note 9.

UNICOR, Federal Prison Industries, Inc.
ACH Vendor/Miscellaneous Payment Enrollment Form

This form is used for Automated Clearing House (ACH) payments with an addendum record that contains payment related information processed through the Vendor Express Program. Recipients of these payments should bring this information to the attention of their financial institution when presenting this form for completion.

PRIVACY ACT STATEMENT

The following information is provided to comply with the Privacy Act of 1974 (P.L. 93-579). All information collected on this form is required under the provisions of 31 U.S.C. 3322 and 31 CFR 210. This information will be used by the Treasury Department to transmit payment data, by electronic means to vendor's financial institution. Failure to provide the requested information may delay or prevent the receipt of payments through the Automated Clearing House Payment System. The TIN number submitted may be used for the purposes of collecting and reporting on any delinquent amounts arising out of such person's relationship with the government.

AGENCY INFORMATION

FEDERAL PROGRAM AGENCY: UNICOR Federal Prison Industries, Inc.			
AGENCY IDENTIFIER: UNICOR	**AGENCY LOCATION CODE (ALC)**: 15080001		**ACH FORMAT**: CTX
MAILING ADDRESS: UNICOR, Federal Prison Industries, Inc. 320 First Street N. W., Financial Management Branch, 8th Floor Washington, D.C. 20534			
VENDOR PAYMENT CONTACT:	**E-MAIL:**	**TELEPHONE :**	**FAX:**

PAYEE/COMPANY INFORMATION
****You must include your Dun & Bradstreet Number (DUNS #) ****

COMPANY NAME:		**DUN & BRADSTREET NUMBER:**	**CURRENT DATE:**
COMPANY ADDRESS:			
CONTACT PERSON:	**TELEPHONE :**	**E-MAIL:**	**FAX :**
TAXPAYER IDENTIFICATION NO (TIN) OR SSN NO:		**ADDITIONAL INFORMATION:**	

FINANCIAL INSTITUTION INFORMATION

NAME:		
ADDRESS:		
ACH COORDINATOR NAME:	**TELEPHONE NUMBER:**	
NINE DIGIT ROUTING TRANSIT NUMBER:		
DEPOSITOR ACCOUNT TITLE:		
DEPOSITOR ACCOUNT NUMBER:		**LOCKBOX NUMBER:**

TYPE OF ACCOUNT: ___ **CHECKING** ___ **SAVINGS** ___ **LOCKBOX** **(Check One)**	
SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL:(could be the same as ACH Coordinator)	**TELEPHONE :**

INSTRUCTIONS: Offerors submit recent and relevant information concerning contracts and subcontracts (Federal, State, local government or private) which demonstrates their ability to perform the proposed effort: (One contract reference per form. Form may be duplicated)

Contract Number: _____

Contractor (Name, Address, Zip Code & Telephone # & Email address):

_____

_____

_____

_____

Type of Contract: _____

Contract Dollar Value: _____

Date of Award: _____ Date Completed _____

(IF not completed, provide status):

_____

_____

_____

Type/Extent of Subcontracting:

_____

_____

_____

Complexity of Product/Service:

_____

_____

_____

_____

Percentage of Work completed by your company: _____

Description of supply/service(s) provided, location & relevancy of work:

_____

_____

_____

_____

_____

Name, Address, Telephone Number & E-mail of the Contact Person & their position:

_____

_____

_____

_____

Name of Bank: _____
Address: _____
Point of Contact: _____
Telephone Number: _____

INSTRUCTIONS: Offerors submit recent and relevant information concerning contracts and subcontracts (Federal, State, local government or private) which demonstrates their ability to perform the proposed effort: (One contract reference per form. Form may be duplicated)

Contract Number: _____

Contractor (Name, Address, Zip Code & Telephone # & Email address):

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Type of Contract: _____

Contract Dollar Value: _____

Date of Award: _____ Date Completed _____

(IF not completed, provide status):

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_____

Type/Extent of Subcontracting:

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Complexity of Product/Service:

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_____
_____
_____

Percentage of Work completed by your company: _____

Description of supply/service(s) provided, location & relevancy of work:

_____
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_____
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Name, Address, Telephone Number & E-mail of the Contact Person & their position:

_____
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_____
_____

Name of Bank: _____
Address: _____
Point of Contact: _____
Telephone Number: _____

INSTRUCTIONS: Offerors submit recent and relevant information concerning contracts and subcontracts (Federal, State, local government or private) which demonstrates their ability to perform the proposed effort: (One contract reference per form. Form may be duplicated)

Contract Number: _____

Contractor (Name, Address, Zip Code & Telephone # & Email address):

_____

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_____

_____

Type of Contract: _____

Contract Dollar Value: _____

Date of Award: _____ Date Completed _____

(IF not completed, provide status):

_____

_____

_____

Type/Extent of Subcontracting:

_____

_____

_____

Complexity of Product/Service:

_____

_____

_____

_____

Percentage of Work completed by your company: _____

Description of supply/service(s) provided, location & relevancy of work:

_____

_____

_____

_____

_____

Name, Address, Telephone Number & E-mail of the Contact Person & their position:

_____

_____

_____

_____

Name of Bank: _____
Address: _____
Point of Contact: _____
Telephone Number: _____

Wire
Items # 1 thru 11

Approved as an American National Standard
ANSI Approval Date: November 6, 2001

Errata to

NEMA Standards Publication HP 3-2001

Electrical and Electronic PTFE (Polytetrafluoroethylene) Insulated High Temperature Hook-Up Wire; Types ET (250 Volts), E (600 Volts), and EE (1000 Volts)

Published by

National Electrical Manufacturers Association
1300 North 17th Street
Rosslyn, Virginia 22209

www.nema.org

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Section 4
WIRE IDENTIFICATION

4.1 CIRCUIT IDENTIFICATION

Circuit identification if required shall be accomplished by use of an insulation color in accordance with EIA-359-A-85 (R 1985). Colored stripe or band tracers on the insulation, and/or printed numbers or letters shall be permitted, in addition to the colored insulation.

4.1.1 Lay of Stripes

The length of lay of colored stripes shall conform to Table 4-1.

Table 4-1
LENGTH OF LAY OF STRIPES

Diameter Over Finished Wire (inch)	Length of Lay (inches, maximum)
0.000 to 0.083	1.00
0.084 to 0.110	1.50
0.111 and larger	2.00

4.2 IDENTIFICATION BY PRINTING

Identification by printing on the wire is available for Types E and EE wire for conductor sizes 22 AWG and larger. Print should be clear, legible, and of a contrasting color to the insulation. Printing on Type ET wire is not recommended due to the thin wall construction. PIN printed on wire shall not include color designation. Identification marks shall not be applied by hot stamp marking or other methods which significantly penetrate the insulation.

4.2.1 Identification of Product

When specified, the printed identification shall be marked at intervals of 9 to 60 inches measured from the beginning of one complete marking to the beginning of the succeeding marking. Per paragraph 1.4, the identification shall consist of:

a. NEMA Standard for PTFE (HP 3)
b. NEMA Type
c. Construction
d. Conductor material and coating
e. AWG
f. Number of strands
g. Manufacturer's identification ("CAGE code")

Example:
HP3-EXBGE 12345

Approved as an American National Standard
ANSI Approval Date: November 6, 2001

NEMA Standards Publication HP 3-2001

Electrical and Electronic PTFE (Polytetrafluoroethylene) Insulated High Temperature Hook-Up Wire; Types ET (250 Volts), E (600 Volts), and EE (1000 Volts)

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CONTENTS

FOREWORD

This standard publication was developed by the NEMA High Performance Wire and Cable Section. It was developed to assure that these types of hook-up wire can be procured and that they will meet requirements associated with high reliability commercial electrical and electronic equipment in which it is used. Compliance with provisions of this Standards Publication is strictly voluntary and any certification of compliance is left to the discretion of the buyer and seller.

This Standards Publication was designed as a non-government standard for replacement of MIL-W-16878 PTFE insulated wire slash sheets (/4, /5, /6, /20 through /27, /34, and /35).

This Standards Publication was developed by the High Performance Wire and Cable Section of NEMA. Section approval of the standard does not necessarily imply that all section members voted for its approval or participated in its development. At the time it was approved, the Section was composed of the following members:

Alcatel/Nexans—Elm City, NC
General Cable—Willimantic, CT
Cable USA Inc.—Naples, FL
Furon Company/Dekron Division—Akron, OH
Judd Wire Inc.—Turner Falls, MA
Quirk Wire Company Inc.—West Brookfield, MA
Radix Wire Company—Cleveland, OH
Raychem/Tyco Corporation—Menlo Park, CA
Rockbestos/Surprenant Cable Corp.—Clinton, MA

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Section 1
GENERAL

1.1 SCOPE

This Standards Publication covers specific requirements for PTFE (polytetrafluoroethylene) insulated solid and stranded wire, designed for the internal wiring of high reliability electrical and electronic equipment. This Standards Publication addresses 250 volt (Type ET), 600 volt (Type E), and 1000 volt (Type EE) wire and permits continuous conductor temperature ratings of -65°C to +200°C with silver-coated conductors and -65°C to +260°C with nickel-coated conductors. These types of hook-up wire are used when the following properties are called for:

- High temperature resistance
- Low temperature resistance
- Low dielectric constant
- Solder iron resistance
- Resistance to cleaning solutions or a variety of chemicals that may come in contact with either the wire or the equipment
- Good flexibility and flex life when stranded conductors are used

1.2 REFERENCED STANDARDS AND SPECIFICATIONS

The following publications are adopted in part, by reference in this publication, and are available from the organizations below.

American Society For Testing and Materials
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

B 3-95	*Soft or Annealed Copper Wire*
B 286-95	*Copper Conductors for Use in Hook-up Wire for Electronic Equipment*
B 298-99	*Silver-Coated Soft or Annealed Copper Wire*
B 355-95	*Nickel-Coated Soft or Annealed Copper Wire*
B 452-93	*Copper Clad Steel Wire for Electronic Applications*
B 501-99	*Silver-Coated Copper-Clad Steel Wire for Electronic Applications*
B 559-93	*Nickel-Coated Copper-Clad Steel Wire for Electronic Applications*
B 624-99	*High-Strength, High Conductivity Copper-Alloy Wire for Electronic Application*
D 3032-98	*Hook-up Wire Insulation*
D 4895-98	*PTFE Resin Produced from Dispersion*

American Society for Quality Control
611 E. Wisconsin Ave.
Milwaukee, WI 53202

ANSI/ASQC Z1.4 *Sampling Procedures and Tables for Inspection by Attributes*

Electronic Industries Association
2500 Wilson Blvd.
Arlington, VA 22201

EIA-359 *EIA Standard Colors for Color Identification and Coding*

DODISS-Customer Service
Bldg. 4D
700 Robbins Ave.
Philadelphia, PA 19111-5094

MIL-STD-2223 *Test Methods for Insulated Electric Wire*

National Electrical Manufacturers Association
1300 North 17th Street, Suite 1847
Rosslyn, VA 22209

WC 52-1991 *High Temperature and Electronic Insulated Wire-Impulse Dielectric Testing*

WC 56-1993 (R2000) *3.0 kHz Insulation Continuity Proof Testing of Hook Up Wire*

1.3 RECOMMENDED USES OF WIRE TYPES

1.3.1 Type ET

Type ET wire is intended for use in low voltage, high temperature applications. It is considered suitable for use up to a maximum of 250 volts RMS (root mean square) and/or for high frequency circuitry.

Wires having ET thin wall insulation are relatively fragile and can be damaged. They should not be used where mechanical stress or an abrasive environment may exist.

1.3.2 Type E

Type E is intended for high temperature applications and is considered suitable for use at a maximum of 600 volts RMS and/or for high frequency circuitry.

1.3.3 Type EE

Type EE is intended for high temperature applications and is considered suitable for use at a maximum of 1000 volts RMS and/or for high frequency circuitry.

1.4 Part Identification Number (PIN)

The PIN shall be of the following form:

HP3-(TYPE)(CONSTRUCTION)(CONDUCTOR MATERIAL)(AWG)(NUMBER OF STRANDS)(COLOR)

NEMA STANDARD
for PTFE

NEMA TYPE E, EE, ET
as described above

CONSTRUCTION
Wrapped (W) Extruded (X)

Example:

HP3-EXBGE9

PTFE ,Type E, Extruded, Silver Coated Copper, 20 AWG, 19 Strands, White

Table 1-1
CONDUCTOR MATERIAL AND COATING

Letter	Conductor Material & Coating	Letter	Conductor Coating & material
B	Silver-coated Copper (SCC)	E	Nickel-coated high-strength copper alloy (NCA)
C	Nickel-Coated Copper	F	Silver-coated copper clad steel (SCCCS)
D	Silver-coated high-strength copper alloy (SCA)	G	Nickel coated copper clad steel (NCCCS)

Table 1-2
AWG NOMINAL CONDUCTOR SIZE

AWG	Letter	AWG	Letter	AWG	Letter	AWG	Letter
32	A	20	G	8	N	2/0	W
30	B	18	H	6	P	3/0	Y
28	C	16	J	4	R	4/0	Z
26	D	14	K	2	S		
24	E	12	L	1	T		
22	F	10	M	1/0	U		

Table 1-3
NUMBER OF STRANDS

Letter	Number of Strands	Letter	Number of Strands	Letter	Number of Strands	Letter	Number of Strands
A	1	G	37	R	817	V	1665
B	7	L	133	S	1045	W	2109
E	19	P	665	T	1330		

Table 1-4
COLOR

Color (see para. 4.1)	Number Designator	Color	Number Designator
Black	0	Green	5
Brown	1	Blue	6
Red	2	Violet (Purple)	7
Orange	3	Gray (Slate)	8
Yellow	4	White	9

Section 2
CONDUCTORS

2.1 CONDUCTOR MATERIALS

The base conductor material shall be composed of soft or annealed copper conforming to ASTM B 3, or copper-clad steel conforming to ASTM B 452, Class 40A, or a copper alloy conforming to ASTM B 624. Conductor strands shall be individually coated. The addition of the coating material after stranding shall not be permitted.

2.2 CONDUCTOR COATINGS

2.2.1 Silver-Coated Conductors

Silver-coated conductors shall be employed for applications up to conductor temperatures of 200°C. The silver coating shall be commercially pure silver and not less than 40 microinches in thickness for copper and copper alloys and not less than 50 microinches for copper-clad steel. The conductor shall be tested prior to stranding for continuity of coating and coating thickness in accordance with ASTM B 298 for silver-coated copper and copper alloy or ASTM B 501 for silver-coated copper-clad steel.

2.2.2 Nickel-Coated Conductors

Nickel-coated conductors shall be employed for applications up to conductor temperatures of 260°C. The nickel coating shall be commercially pure nickel and not less than 50 microinches in thickness. The conductor shall be tested prior to stranding for continuity of coating and coating thickness in accordance with ASTM B 355 for nickel-coated copper and copper alloy or ASTM B 559 for nickel-coated copper-clad steel.

2.3 STRANDING

Stranding shall be in accordance with Table 2. The lay length of the outer layer shall be 8 to 16 times the maximum conductor diameter. All requirements for stranded conductors, not specified in Table 2, shall be in accordance with the applicable requirements of ASTM B 286.

2.4 MINIMUM CONDUCTOR DIAMETER

The minimum conductor diameter shall be controlled by maximum dc resistance per Table 2.

2.5 CONDUCTOR SPLICES

Splices shall not be made in a stranded conductor as a whole: however, individual strands and solid conductors may be spliced. Splices shall be made by electro welding or brazing with silver composition solder.

Table 2-1
DETAILS OF CONDUCTORS

Size (AWG)	Stranding	Single End Strand Dia. Nominal (inches)	Nominal CMA	Conductor Diameter Nominal (inches)	Conductor Diameter Maximum (inches)	Maximum DC Resistance of Finished Wire (Ohms/1000 Ft. at 20 °C) SCC	NCC	SCA	NCA	SCCCS	NCCCS	Alloy Breaking Strength Minimum (Lbs.)
32	1 X 32	0.0080	64	0.0080	0.0083	166	177	196	210	424	433	2.94
	7 X 40	0.0031	67	0.0093	0.0102	170	186	199	223	433	449	2.97
	19 X 44	0.0020	76	0.0094	0.0115	157	179	185	215	401	423	3.23
30	1 X 30	0.0100	100	0.0100	0.0103	106	110	124	131	270	273	4.62
	7 X 38	0.0040	112	0.0120	0.0129	100	110	118	132	256	265	5.02
	19 X 42	0.0025	119	0.0118	0.0140	98.6	112	116	135	251	265	5.16
28	1 X 28	0.0126	159	0.0126	0.0130	66.7	69.4	78.4	82.3	170	172	7.33
	7 X 36	0.0050	175	0.0150	0.0159	63.6	67.6	74.8	80.5	162	166	7.92
	19 X 40	0.0031	183	0.0146	0.0170	63.1	69.3	74.2	83.0	161	167	8.06
26	1 X 26	0.0159	253	0.0159	0.0164	41.9	43.6	49.2	51.7	107	108	11.7
	7 X 34	0.0063	278	0.0189	0.0198	39.7	42.2	46.7	50.3	101	103	12.7
	19 X 38	0.0040	304	0.0188	0.0215	37.3	41.0	43.9	49.1	95.2	98.7	13.6
24	1 X 24	0.0201	404	0.0201	0.0207	26.2	27.3	30.8	32.3	66.8	67.5	18.7
	7 X 32	0.0080	448	0.0240	0.0249	24.5	26.0	28.8	31.0	62.4	63.7	20.6
	19 X 36	0.0050	475	0.0235	0.0265	23.6	25.2	27.8	29.9	60.3	61.6	21.5
22	1 X 22	0.0253	640	0.0253	0.0261	16.5	17.2	19.4	20.4	42.2	42.6	29.6
	7 X 30	0.0100	700	0.0300	0.0309	15.6	16.2	18.3	19.2	39.7	40.1	32.3
	19 X 34	0.0063	754	0.0296	0.0330	14.8	15.7	17.4	18.7	37.7	38.5	34.4
20	1 X 20	0.0320	1024	0.0320	0.0330	10.3	10.8	12.2	12.8	26.4	26.6	47.3
	7 X 28	0.0126	1111	0.0378	0.0389	9.81	10.2	11.5	12.1	25.0	25.3	51.3
	19 X 32	0.0080	1216	0.0376	0.0415	9.10	9.68	10.7	11.5	23.2	23.7	55.9
18	1 X 18	0.0403	1624	0.0403	0.0415	6.52	6.79	7.67	8.04	16.6	16.8	75.0
	7 X 26	0.0159	1770	0.0477	0.0491	6.16	6.42	7.25	7.60	15.7	15.9	81.7
	19 X 30	0.0100	1900	0.0470	0.0515	5.79	6.03	6.81	7.15	14.8	14.9	87.8
16	1 X 16	0.0508	2581	0.0508	0.0523	4.10	4.27	4.82	5.06	10.5	10.6	112
	19 X 29	0.0113	2426	0.0531	0.0582	4.54	4.73	5.34	5.60	11.6	11.7	119
14	19 X 27	0.0142	3831	0.0667	0.0731	2.87	2.99					
12	19 X 25	0.0179	6088	0.0841	0.0922	1.81	1.88					
	37 X 28	0.0126	5874	0.0858	0.0908	1.89	1.97					
10	37 X 26	0.0159	9354	0.108	0.115	1.19	1.24					
8	133 X 29	0.0113	16983	0.161	0.175	0.661	0.688					
6	133 X 27	0.0142	26818	0.202	0.219	0.418	0.436					
4	133 X 25	0.0179	42615	0.266	0.277	0.263	0.274					
2	665 X 30	0.0100	66500	0.335	0.342	0.170	0.177					
1	817 X 30	0.0100	81700	0.378	0.382	0.139	0.144					
1/0[1]	1045 X 30	0.0100	104500	0.410	0.431	0.108	0.113					
2/0[2]	1330 X 30	0.0100	133000	0.477	0.486	0.085	0.0887					
3/0[3]	1665 X 30	0.0100	166500	0.535	0.545	0.067	0.0705					
4/0[4]	2109 X 30	0.0100	210900	0.601	0.635	0.053	0.0559					

CMA – Circular Mil Area
SCC – Silver-coated copper
NCC – Nickel-coated copper
SCA – Silver-coated high-strength copper alloy
NCA – Nickel-coated high-strength copper alloy
SCCCS – Silver-coated copper-clad steel
NCCCS - Nickel-coated copper-clad steel

[1] Can also be referenced as 01
[2] Can also be referenced as 02
[3] Can also be referenced as 03
[4] Can also be referenced as 04

Section 3
INSULATION

3.1 GENERAL

The insulating material shall be a PTFE resin conforming to ASTM D 4895.

3.2 PTFE INSULATION

A continuous coating of extruded or tape-wrapped PTFE insulation shall be added over the conductor and shall be processed to meet the requirements listed herein. Sizes AWG 2 and larger shall be tape-wrapped only. Only the extruded insulations are required to meet the concentricity requirements specified herein.

The diameter of the insulated conductors shall be in accordance with Table 3-1 and as measured in accordance with paragraph 6.1.4

Table 3-1
DIAMETERS OF INSULATED CONDUCTORS
(TYPES ET, E, EE)
(All Dimensions in Inches)

			Insulated Conductor Diameter	
AWG	Type	Stranding	(Minimum)	(Maximum)
32	ET	1x32	0.016	0.022
	ET	7x40	0.020	0.024
	ET	19x44	0.020	0.024
	E	1x32	0.025	0.033
	E	7x40	0.026	0.034
	E	19x44	0.026	0.034
	EE	1x32	0.034	0.042
	EE	7x40	0.036	0.044
	EE	19x44	0.036	0.044
30	ET	1x30	0.020	0.024
	ET	7x38	0.022	0.026
	ET	19x42	0.022	0.026
	E	1x30	0.026	0.034
	E	7x38	0.028	0.036
	E	19x42	0.028	0.036
	EE	1x30	0.036	0.044
	EE	7x38	0.038	0.046
	EE	19x42	0.038	0.046
28	ET	1x28	0.023	0.027
	ET	7x36	0.025	0.029
	ET	19x40	0.025	0.029
	E	1x28	0.029	0.037
	E	7x36	0.031	0.039
	E	19x40	0.031	0.039
	EE	1x28	0.039	0.047
	EE	7x36	0.041	0.049
	EE	19x40	0.041	0.049

Table 3-1 (Continued)
DIAMETERS OF INSULATED CONDUCTORS
(TYPES ET, E, EE)
(All Dimensions in Inches)

AWG	Type	Stranding	Insulated Conductor Size Diameter (Minimum)	Insulated Conductor Size Diameter (Maximum)
26	ET	1x26	0.026	0.030
	ET	7x34	0.029	0.033
	ET	19x38	0.029	0.034
	E	1x26	0.032	0.040
	E	7x34	0.035	0.043
	E	19x38	0.035	0.044
	EE	1x26	0.042	0.050
	EE	7x34	0.045	0.053
	EE	19x38	0.045	0.054
24	ET	1x24	0.030	0.034
	ET	7x32	0.034	0.038
	ET	19x36	0.034	0.039
	E	1x24	0.036	0.044
	E	7x32	0.040	0.048
	E	19x36	0.040	0.049
	EE	1x24	0.046	0.054
	EE	7x32	0.050	0.058
	EE	19x36	0.050	0.059
22	ET	1x22	0.035	0.040
	ET	7x30	0.040	0.044
	ET	19x34	0.040	0.046
	E	1x22	0.041	0.049
	E	7x30	0.046	0.054
	E	19x34	0.046	0.056
	EE	1x22	0.051	0.060
	EE	7x30	0.056	0.064
	EE	19x34	0.056	0.066

Table 3-1 (Continued)
DIAMETERS OF INSULATED CONDUCTORS
(TYPES ET, E, EE)
(All Dimensions in Inches)

			Insulated Conductor Size Diameter	
AWG	Type	Stranding	(Minimum)	(Maximum)
20	ET	1x20	0.042	0.046
	ET	7x28	0.048	0.052
	ET	19x32	0.048	0.052
	E	1x20	0.048	0.056
	E	7x28	0.054	0.062
	E	19x32	0.054	0.062
	EE	1x20	0.058	0.066
	EE	7x28	0.064	0.072
	EE	19x32	0.064	0.072
18	E	1x18	0.056	0.066
	E	7x26	0.064	0.074
	E	19x30	0.064	0.074
	EE	1x18	0.066	0.076
	EE	7x26	0.074	0.084
	EE	19x30	0.074	0.084
16	E	1x16	0.067	0.081
	E	19x29	0.073	0.087
	EE	1x16	0.077	0.089
	EE	19x29	0.083	0.095
14	E	19x27	0.088	0.102
	EE	19x27	0.098	0.114
12	E	19x25	0.107	0.121
	E	37x28	0.105	0.119
	EE	19x25	0.117	0.133
	EE	37x28	0.115	0.131

Table 3-1 (Continued)
DIAMETERS OF INSULATED CONDUCTORS
(TYPES ET, E, EE)
(All Dimensions in Inches)

			Insulated Conductor Size Diameter	
AWG	Type	Stranding	(Minimum)	(Maximum)
10	E	37x26	0.127	0.141
	EE	37x26	0.137	0.153
8	EE	133x29	0.199	0.219
6	EE	133x27	0.286	0.301
4	EE	133x25	0.349	0.369
2	EE	665x30	0.395	0.415
1	EE	817x30	0.475	0.495
1/0	EE	1045x30	0.504	0.524
2/0	EE	1330x30	0.553	0.577
3/0	EE	1665x30	0.633	0.657
4/0	EE	2109x30	0.703	0.727

Section 4
WIRE IDENTIFICATION

4.1 CIRCUIT IDENTIFICATION

Circuit identification if required shall be accomplished by use of an insulation color in accordance with EIA-359-A-85 (R 1985). Colored stripe or band tracers on the insulation, and/or printed numbers or letters shall be permitted, in addition to the colored insulation.

4.1.1 Lay of Stripes

The length of lay of colored stripes shall conform to Table 4-1.

Table 4-1
LENGTH OF LAY OF STRIPES

Diameter Over Finished Wire (inch)	Length of Lay (inches, maximum)
0.000 to 0.083	1.00
0.084 to 0.110	1.50
0.111 and larger	2.00

4.2 IDENTIFICATION BY PRINTING

Identification by printing on the wire is available for Types E and EE wire for conductor sizes 22 AWG and larger. Print should be clear, legible, and of a contrasting color to the insulation. Printing on Type ET wire is not recommended due to the thin wall construction. PIN printed on wire shall not include color designation. Identification marks shall not be applied by hot stamp marking or other methods which significantly penetrate the insulation.

4.2.1 Identification of Product

When specified, the printed identification shall be marked at intervals of 9 to 60 inches measured from the beginning of one complete marking to the beginning of the succeeding marking. Per paragraph 1.4, the identification shall consist of:

a. NEMA Standard for PTFE (HP 3)
b. NEMA Type
c. Construction
d. Conductor material and coating AWG
e. Number of strands
f. Conductor material and coating
g. Color
h. Manufacturer's identification ("CAGE code")

Example:
HP3-EXBGE 12345

Section 5
PHYSICAL AND ELECTRICAL REQUIREMENTS

5.1 GENERAL

The physical and electrical requirements for Types ET, E, and EE wire shall be in accordance with this Section and Tables 2-1, 3-1, and 5-1. Testing shall be conducted in accordance with Section 6.

5.2 QUALITY CONFORMANCE INSPECTION OF FINISHED PRODUCT

5.2.1 Definitions

5.2.1.1. Inspection Lot

An inspection lot shall consist of all wire of the same part number, produced under essentially the same conditions, and presented for inspection at one time.

5.2.1.2 Unit of Product

The unit of product for determining lot size for sampling shall be the quantity of wire offered for inspection on one coil, one reel, or one spool, as applicable.

5.2.2 Sampling Inspection

All other tests shall use a sampling plan in accordance with special inspection level S-2 in ANSI/ASQC Z1.4.

5.3 WORKMANSHIP

The insulated wire shall be free of kinks, abrasions, and cracked or peeled surfaces. The wire should be a uniform and consistent product and should be free from defects which will adversely affect the serviceability of the product for the intended use, as described in Section 1.2.

5.4 MATERIALS CERTIFICATION

Suppliers shall maintain certifications that all materials used conform to the requirements in Section 2 and Section 3.

Table 5-1
PHYSICAL AND ELECTRICAL REQUIREMENTS FOR TYPE ET, E, AND EE WIRES

Test	Requirements		
	ET	E	EE
Conductor Resistance (See 6.2.1)	See Table 2	See Table 2	See Table 2
High-Frequency Spark Test Voltage or Impulse Spark Test Voltage (See 6.2.2)	2.9 kV 4.0 kV	4.6 kV 6.5 kV	5.7 kV 8.0 kV
Insulation Tensile Strength (See 6.1.3)	4000 psi (Minimum)	4000 psi (Minimum)	4000 psi (Minimum)
Insulation Elongation (See 6.1.3)	200 percent (Minimum)	200 percent (Minimum)	200 percent (Minimum)
Wrapback Test & Dielectric Strength Peak Voltage (See 6.1.2 and 6.2.3)	1.5 kV	2.0 kV	3.0 kV
Dimensional Inspection (See 6.1.4.1 and 6.1.4.2)	See Tables 2 and 3	See Tables 2 and 3	See Tables 2 and 3
Concentricity for Extruded Insulations (See 6.1.4.3)	70% (Minimum)	70% (Minimum)	70% (Minimum)
Shrinkage (See 6.1.5)	0.125" (Maximum)	0.125" (Maximum)	0.125" (Maximum)
Marking and Stripe Durability (See 6.1.6)	125 cycles (Minimum)	125 cycles (Minimum)	125 cycles (Minimum)

Section 6
TEST PROCEDURES

6.1 PHYSICAL TESTS

Physical test on the conductor and insulated wire shall be made in accordance with the following procedures:

6.1.1 Test Temperature

Unless otherwise specified, physical tests shall be performed at a room temperature of 23°C ± 2°C. The test specimens shall be kept at room temperature for not less than 30 minutes prior to the tests.

6.1.2 Wrapback Test

This test shall be used only for 10 AWG and smaller wires.

The center portion of a 12-inch minimum length specimen of finished PTFE insulated wire shall be tightly wound back on itself for a total of four close turns as shown in Figure 6-1. The specimen shall then be placed in an oven and heated for two hours at 307°C ± 5°C. At the end of this period, the specimen shall be visually examined for cracks with the unaided eye and subjected to the dielectric strength test in 6.2.3 without unwinding.

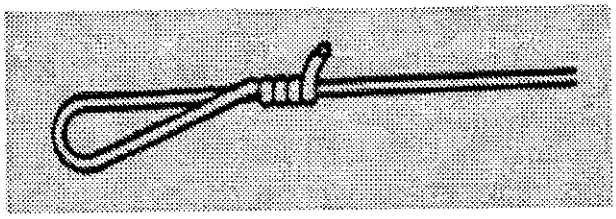

Figure 6-1
WRAP BACK TEST

6.1.3 Insulation Tensile Strength and Elongation

The insulation tensile strength and elongation test shall be conducted in accordance with, ASTM D 3032, Section 17, except that the rate of travel of the jaws shall be 2 inches minimum and 20 inches maximum per minute. Determination of insulation tensile strength for tape-wrapped constructions shall use the optical method for insulated wire in ASTM D 3032 Section 15 to measure wall thickness.

6.1.4 Dimensional Inspection

Using a micrometer or equivalent device capable of measuring to the nearest 0.0001 inch, determine the diameters of the conductor and insulation as described below.

6.1.4.1 Conductor Diameter

Remove the insulation for the specimen without damaging or distorting the conductor. Measure the outer diameter in at least three locations along the length of the stripped conductor. Each measurement shall consist of two micrometer readings taken 90 degrees from each other. For sizes 8 and larger, a circumferential measuring tape may be used. Report the average of the readings.

6.1.4.2 Insulation Diameter

Measure the outer diameter of the insulated wire in at least three locations along a 12 inch length of the specimen. Each measurement shall consist of two readings taken 90 degrees from each other. For sizes 8 and larger, a circumferential measuring tape may be used. Report the average of the readings.

6.1.4.3 Concentricity

The concentricity of the insulation shall be measured on a cross section of the finished wire at 10 X magnification. In making the determination, the minimum thickness of the insulation shall be located and measured in the cross section. The maximum thickness of the insulation wall shall be located and measured in the same cross section. The percent concentricity is 100 times the ratio of the minimum measurement to the corresponding maximum measurement. Three cross sections shall be measured in each specimen. The failure of the concentricity of any cross section shall constitute failure of the entire specimen.

6.1.5 Shrinkage

Shrinkage of the insulation shall be measured using a 12-inch specimen with ends cut flush. Specimen shall be placed in an air-circulating oven at 285 ± 3C for one hour. At the end of the conditioning period, allow specimen to cool to room temperature. Measure shrinkage on both ends. The maximum values shall not exceed the requirements in Table 5.

6.1.6 Marking and Stripe Durability

6.1.6.1 Specimen

The specimen shall consist of a piece of finished wire which shall have sufficient length for use in the test as specified in 6.1.6.3.

6.1.6.2 Special Apparatus

Apparatus shall include an abrading machine which shall support and secure the specimen such that it is straight and horizontal, and which shall abrade the specimen printed identification by means of a motor driven, transversely reciprocating steel pin. this steel pin shall have a diameter of 0.025 ± 0.001 inch where it abrades the specimen. The steel pin shall be horizontal and perpendicular to the specimen axis, shall ride along the top of the specimen and shall be weighted to bear down on the specimen with a force of 1 plus 1/16, minus 0 pound for wire size number 24 or larger, and 1/2 plus 1/8, minus 0 for wire size 26 and smaller. The pin shall be reciprocated at a rate of 60 ± 2 cycles per minute, such that the pin is drawn along the specimen for a distance of 3/8 plus 1/16, minus 0 inch in each direction (3/4 inch minimum total excursion) during each cycle. The abrading machine shall incorporate an automatic counter to total the number of cycles (a cycle is defined as one stroke forward and one stroke backwards across the specimen) the specimen is abraded by the steel pin during the test.

6.1.6.3 Procedure

The specimen shall be wiped with a clean, dry cloth to remove any lubricant or dirt, and shall be secured in the abrading machine with the specimen printed identification facing upwards, where it is to be abraded by the steel pin. The automatic counter shall be set initially to zero. The abrading machine motor shall then be turned on, allowing the steel pin to reciprocate and abrade the specimen printed identification until 125 cycles have been completed. This test shall next be repeated four more times (five times total), subjecting a fresh portion of the specimen printed identification to abrasion each time.

6.1.6.4 Observation

Specimen failure shall be construed if two or more abraded sites exhibit a complete line of obliteration.

6.2 ELECTRICAL TESTS

Electrical tests on the insulated conductors shall be made in accordance with the following procedures:

6.2.1 Conductor Resistance

The dc resistance of the finished insulated wire shall be measured in accordance with MIL-STD-2223 Method 5003.

6.2.2 High-Frequency or Impulse Spark Test

High-frequency spark testing or impulse spark testing shall be conducted on 100 percent of all lengths of insulated wire in accordance with NEMA WC 52 or NEMA WC 56 at the voltages specified in the requirements of Table 5-1.

6.2.3 Dielectric Strength

One inch of insulation shall be removed from each end of the specimen and the conductor shall be attached to an electric lead. The specimen shall be immersed in tap water at 23°C ± 5°C, except for the uninsulated ends. After immersion for 1 hour, the voltage specified (see Table 5-1) at 60 Hz shall be applied between the conductor and an electrode in contact with liquid. The applied voltage shall be uniformly increased from zero to the specified peak voltage in 30 seconds, maintained at the voltage for a period of 1 minute, and uniformly reduced to zero in 30 seconds.

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Section 7
PACKAGING

7.1 PACKAGING REQUIREMENTS

Spools, reels, and packaging material(s) shall be sufficient to afford adequate protection against physical damage during shipment from the supply source to the customer. Any special packaging requirements must be specified in the ordering data.

7.2 LABELING

HP3 PIN
Date (month, day, and year) of manufacture and inspection
Manufacturer's name or trademark

7.3 LENGTHS

Table 7-1 specifies the minimum lengths and quantity of lengths per spool or reel that are acceptable unless otherwise specified.

Table 7-1
MINIMUM LENGTHS FOR PTFE WIRE CONSTRUCTIONS

AWG size	Percentage of Order	Length (feet) One Continuous length	Max. no. of lengths (per spool or reel)	
			500-1000 ft.	1001-1500 ft.
32 to 22	25	50-75	3	5
	25	75-300		
	50	301 or more		
20 to 16	Unacceptable	Under 75	4	6
	20	75-100		
	50	101-300		
	30	301 or more		
14-10	Unacceptable	Under 50	5	7
	40	50-100		
	50	101-300		
	10	301 or more		
8 and larger	10	25-50	6	8
	70	51-100		
	20	101 or more		

Section 8
ORDERING DATA

8.1 ORDERING INFORMATION

Purchasing documents should specify the following information:

a. Part identification number (PIN). See paragraph 1.4
b. Packaging Requirements
c. Length Requirements
d. Quantity
e. Optional Identification (stripes, bands, tracers, printing, lot coding)

Appendix A
MEASUREMENT AND CALCULATION DATA FOR TABLE 2

Minimum alloy breaking strength calculated based on the minimum diameter and tensile strength per ASTM B 624

Nominal CMA based on the square of the nominal single end diameter in mils times the number of ends.

Nominal conductor diameter based on nominal single end diameter per ASTM B 3, B 298, B 355, B 501, and B 559 which are all the same.
3 times the nominal single end diameter for 7 strand and 4.7 times for 19 strand was used. The OD for 19 strand was based on the unilay construction which is the most commonly used.

Maximum conductor diameter based on maximum single end diameters for nickel coated copper per ASTM B 355. Three times the maximum single end diameter for 7 strand, 5 times for 19 strand, and 7 times for 37 strand was used. A true concentric construction which represents the largest possible 19 and 37 strand diameter was used. A 19 X 7 true concentric rope which represents the largest diameter was used. Rope Stranding using bunched members maximum diameter is per ASTM B 286.

Maximum DC

SCC and NCC
— DC resistance based on formula in ASTM B 286 Note 2.

SCA
— DC resistance based on formula in ASTM B 286 Note 2 using a conductivity of 85% IACS minimum per ASTM B 624

NCA
— DC resistance based on formula in ASTM B 286 Note 2 using a base conductivity of 85% IACS minimum per ASTM B 624 minus the effect of nickel per ASTM B 286.

Class 2: .0100" diameter and larger	81% IACS
Class 4: .0099" to .0050"	79% IACS
Class 7: .0049" to .0031"	76% IACS
Class 10: .0030" to .0020"	73% IACS

SCCCA
— DC resistance based on formula in ASTM B 286 Note 2 using a minimum conductivity of 39.2% IACS for type 40A per ASTM B 501

NCCCS
— DC resistance based on formula in ASTM B 286 Note 2 using the minimum conductivity for type 40A per ASTM B 559

Class 2: .0100" diameter and larger	38.2% IACS
Class 4: .0099" to .0050"	38.4% IACS
Class 7: .0049" to .0031"	37.8% IACS
Class 10: .0030" to .0020"	37.2% IACS

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Braid
Item # 12

INCH-POUND

A-A-59569A
October 31, 2002
SUPERSEDING
A-A-59569
November 20, 2000

COMMERCIAL ITEM DESCRIPTION

BRAID, WIRE (COPPER, TIN-COATED, SILVER-COATED, OR NICKEL COATED, TUBULAR OR FLAT)

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. SCOPE. This CID covers tin, silver, or nickel-coated copper wires braided in tubular or flat form intended for use as shielding over electrical conductors or connections to motor brushes, controller contacts, and grounding bonds.

2. SALIENT CHARACTERISTICS.

2.1 Materials. The wire used in the construction of braids shall conform to ASTM B33 for tinned copper, ASTM B298 for silver-coated copper, except that the silver coating shall be a minimum of 40 micro-inches thick, and ASTM B355 for nickel-coated copper, except the nickel coating shall be a minimum of 50 micro-inches thick.

2.2 Design and construction. The wire braid shall have the numbers of carriers and ends shown in table I.

2.2.1 Wire lengths. Individual wires shall be to sizes shown in table I and shall be uniform in cross-section. Each wire shall be one continuous length, free from splices except as specified herein.

2.2.2 Splices.

2.2.2.1 Carrier splices. There shall be no more than one splice or break in any carrier in each 25-foot length of the braid.

2.2.2.2 Wire splices. Excluding the carrier splice, there shall be no more than one broken or spliced end of wire in each 25-foot length of the braid.

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any other data that may improve this document should be sent to: Defense Logistics Agency, Defense Supply Center, Columbus (DSCC-VAI), P.O. Box 3990, Columbus, OH 43216-5000.

AMSC N/A FSC 6145

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TABLE I. Braid dimensions and data.

PIN 1/ AA59569	Strand wire size (AWG)	Tubular inside diameter (inches) 2/	Number of carriers	Number of ends	Current rating (amps) 3/	Approx. AWG equiv. 4/	Flat form width x thickness (inches) 5/
*36*0031	36	.031	24	24	7.0	22	.046 x .020
*36*0062	36	.062	24	48	11.0	19	.093 x .031
*34*0062	34	.062	16	32	11.0	19	-
* 32*0062 7/	32	.062	16	16	9.0	20	-
*36*0078	36	.078	24	72	16.0	18	.125 x .020
*36*0109	36	.109	24	96	19.0	16	.156 x .031
* 34*0109 7/	34	.109	16	64	19.0	16	-
* 32*0109 7/	32	.109	16	32	18.0	17	-
*36*0125	36	.125	24	120	25.0	15	.187 x .020
*34*0125	34	.125	24	72	19.0	16	-
* 32*0125 7/	32	.125	24	48	25.0	15	-
*36*0156	36	.156	24	240	40.0	12	.250 x .046
*36*0171	36	.171	24	168	32.0	14	.250 x .030
*34*0171	34	.171	24	120	36.0	13	-
* 32*0171 7/	32	.171	24	72	32.0	14	-
*36*0203	36	.203	24	312	46.0	11	.281 x .046
*34*0203	34	.203	24	192	46.0	11	-
* 32*0203 7/	32	.203	24	120	46.0	11	-
*36*0250	36	.250	24	384	53.0	10	-
*30*0281	30	.281	24	120	60.0	9	-
*36*0375	36	.375	48	384	53.0	10	.625 x .030
*34*0375	34	.375	48	240	53.0	10	-
* 32*0375 7/	32	.375	48	144	46.0	11	-
*30*0375	30	.375	24	168 6/	75.0	8	-
*30*0437	30	.437	24	240	90.0	6	.500 x .093
*36*0500	36	.500	48	528	62.0	9	.625 x .046
*34*0500	34	.500	48	336	62.0	9	-
* 32*0500 7/	32	.500	48	192	62.0	9	-
*30*0500	30	.500	24	360	120.0	6	.625 x .093
*30*0562	30	.562	48	480	145.0	3	-
*30*0656	30	.656	48	768	190.0	1	-
*36*0781	36	.781	48	864	88.0	7	.750 x .040
*34*0781	34	.781	48	528	88.0	7	-
*32*0781	32	.781	48	336	88.0	7	-
*30*0875	30	.875	48	336	100.0	5	1.375 x .050
*30*1000	30	1.000	48	384	120.0	4	-
*30*1125	30	1.125	48	432	130.0	4	-
*30*1375	30	1.375	48	528	150.0	3	1.500 x .060
*30*1500	30	1.500	48	576	165.0	2	-
*30*2000	30	2.000	48	672	180.0	2	-

NOTES:

1/ The complete part or identifying number (PIN) shall include additional information to indicate the form (first asterisk) and strand coating (second asterisk) (see 6.1).

2/ Dimensional tolerances shall be as shown in table II.

3/ Direct current ratings are given for information only and are not requirements. Values shown are for uninsulated braid in free air at 30 °C. Values should be derated if the braid is insulated or in close contact with other components.

4/ Approximate AWG equivalents are given for information only and are not requirements.

5/ Flat form width and thickness are given for information only and are not requirements. Tolerances shall be as shown in table II.

6/ This PIN supersedes the similar construction using 96 ends.

7/ It may not possible to produce 90% coverage on these constructions.

TABLE II. Dimensional tolerances (inches).

Dimensions	Tolerance
.000 - .099	.010
.100 - .249	.016
.250 - .499	.031
.500 - .999	.063
Over .999	.094

2.2.3 Coverage (tubular braid only). Tubular braids shall have a braid angle or number of picks per inch that produces a minimum of 90 percent coverage, except for .078-inch and smaller diameter braids, which shall produce a minimum of 70 percent coverage. The percent of coverage shall be determined by using the following formula.

$$K = 100\left(2F - F^2\right)$$

$$F = \frac{NPW}{CSinA}$$

$$\tan A = \frac{2\pi(D + 2W)P}{C}$$

Where:

K = percent coverage of braided shield
A = braid angle
C = number of carriers (table I)
D = inside diameter in inches (table I)
N = total number of ends (table I)
P = picks per inch (the number of times the carriers in a braid cross over each other in the same direction along the longitudinal axis for each inch of length)
W= diameter of individual braid wire in inches

2.3 Flattening of tubular braid. Unless otherwise specified in the contract or order (see 6.2), tubular shielding braid shall not be flattened beyond the point that would occur by its own weight only, when wound on spools for shipping.

2.4 Solderability. Tin-coated and silver-coated braids shall possess good electrical and mechanical solder joints when tested in accordance with MIL-STD-202, method 208.

2.5 Workmanship. Braids shall be free from lumps, kinks, splits, abrasions, scraped or corroded surfaces, and skin impurities.

3. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4. PRODUCT CONFORMANCE PROVISIONS.

4.1 Product conformance. The products provided shall meet the salient characteristics of this CID; conform to the producer's own drawings, specifications, standards, and quality assurance practices; and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

4.2 Market acceptability. The item offered must have been sold to the Government or commercial market.

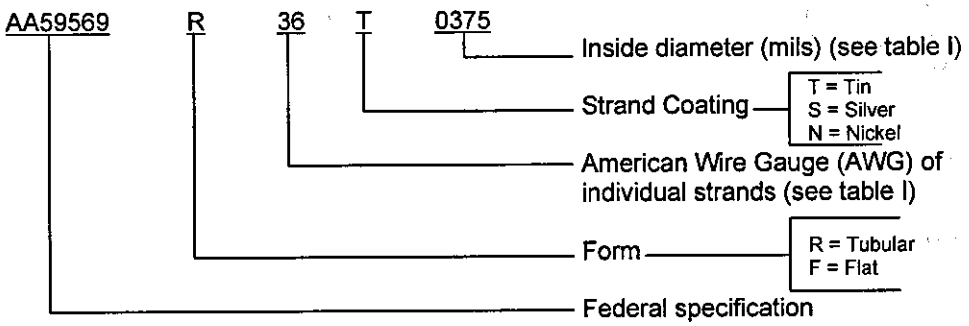
5. PACKAGING. Packing, packaging, and marking shall be as specified in the contract or order (see 6.2 and 6.4).

6. NOTES.

6.1 Part or Identification Number (PIN). The following part or identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

The PIN is made up of the basic CID number and a four-element alphanumeric number (see table I):

Example of PIN: AA59569R36T0375



6.2 Ordering data. The contract or order should specify the following:

a. Number, title, and date of this CID
b. PIN (see table I and 6.1)
c. Resistance to flattening, if other than specified (see 2.3)
d. Packaging requirements (see 5 and 6.4)
e. Unspliced braid length requirements and proportions (see 6.3)

6.3 Nickel Coating. The use of nickel-coated copper braids shall be used only when tin-coated or silver-coated braids cannot meet the intended performance requirements.

6.4 Braid Lengths. Unless otherwise specified in the contract or order (see 6.2), 90 percent of the total order for braid shall be supplied in continuous, unspliced lengths as shown in table III. The remaining 10 percent of the total order for braid shall be acceptable in random unspliced lengths as shown in table III.

TABLE III. Unspliced braid length.

Braid Diameter (inches)	Unspliced lengths	
	90% (nominal lengths)	10% (minimum lengths)
≤ .171	250 feet	50 feet
≥ .203	100 feet	25 feet

6.5 Packaging requirements. The packaging and marking requirements for wire braid should be in accordance with MIL-C-12000, except for the marking of shipments to civil agencies and the additional marking of spools and reels, both listed below.

6.5.1 Marking for civil agency procurement. The container marking of shipments to civil agencies should be in accordance with FED-STD-123.

6.5.2 Marking of spools and reels. In addition to the marking requirements of MIL-C-12000, each spool and reel should be marked with the following information:

a. PIN
b. Net weight (in pounds)
c. Date (month, day, and year) of manufacture
d. Manufacturer's CAGE Code or trademark

6.6 Source of documents.

6.6.1 ASTM standards are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B33 - Tinned Soft or Annealed Copper Wire for Electrical Purposes (DoD adopted)
ASTM B298 - Silver-Coated Soft or Annealed Copper Wire (DoD adopted)
ASTM B355 - Nickel-Coated Soft or Annealed Copper Wire (DoD adopted)

6.6.2 Copies of federal and military specifications and standards required by contractors in connection with specific procurement functions are obtained from the Document Automation and Production Service, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

FED-STD-123 - Marking for Shipment (Civil Agencies)
MIL-STD-202 - Test Methods for Electronic and Electrical Component Parts
MIL-C-12000 - Cable, Cord, and Wire, Electric, Packaging of

6.6.3 The Federal Acquisition Regulation (FAR) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

6.7 Key words.

Wire braid
Shield, braid

MILITARY INTERESTS:

Custodians:
Army - CR
Navy - AS
Air Force - 11
DLA - CC

Review Activities:
Army - AR, AT, AV, MI
Navy - MC, OS, SH
DTRA - DS
NSA - NS

CIVIL AGENCY
COORDINATING ACTIVITIES:

GSA - FSS

Preparing Activity:
DLA - CC

(Project 6145-2334)

Cable
Items # 13 thru 18

INCH-POUND

MIL-DTL-27072/94D
18 August 2006
SUPERSEDING
MIL-C-27072/94C
8 December 2000

DETAIL SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL,
SINGLE CONDUCTOR, SINGLE SHIELDED

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-27072.

Inactive for new design. For new design use MIL-C-55021/2.

REQUIREMENTS:

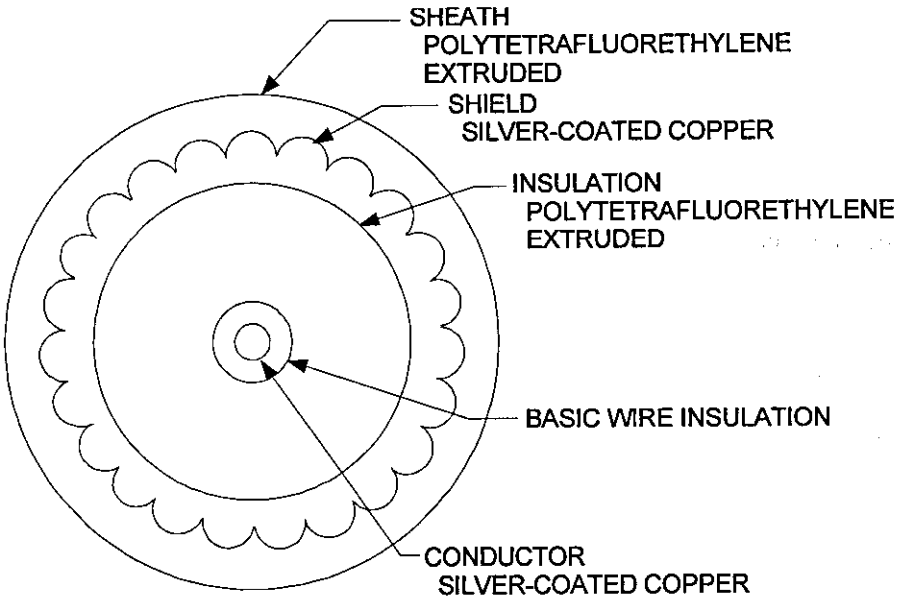


FIGURE 1. Cable configuration.

REQUIREMENTS:

Design and construction:	See figure 1
Number of conductors:	1
Temperature rating:	200 °C
Components:	
Basic wire:	Either NEMA-HP3 or SAE-AS22759 (see table I)
Conductor:	Silver-coated copper
Primary insulation:	Polytetrafluoroethylene
Colors:	White
Jacket over insulation:	Not applicable
Filler:	Not applicable
Cabling:	Not applicable
Binder tape material:	Not applicable
Insulation:	Polytetrafluoroethylene extruded
Marking tape:	Marking tape shall be placed under the sheath or shield
Shield:	
Material:	Silver-coated copper
Gauge:	38 AWG
Braid angle:	20 to 40 degrees
Jacket under shield:	Not applicable
Sheath:	
Material:	Polytetrafluoroethylene
Wall thickness:	Not applicable
Tensile strength:	In accordance with MIL-DTL-27072
Ultimate elongation:	In accordance with MIL-DTL-27072
Accelerated aging:	In accordance with MIL-DTL-27072
Color:	See MIL-DTL-27072
Finished cable:	See table I
Cold bend:	Mandrel size in accordance with MIL-DTL-27072
Dielectric withstanding voltage:	2,000 V rms
Conductor resistance:	In accordance with basic wire specification

TABLE I. Construction data.

PIN M27072/94 1/, 2/	Wire size	Number of Strands 3/	Strand size (AWG)	Nominal diameter Inches(mm) 4/ 5/	Finished cable diameter inches (mm) 4/ 5/	
					Minimum	Maximum
EDDE*	14	19	27	.072 (1.83)	.125 (3.18)	.152 (3.86)
FDDE*	16	19	29	.057 (1.45)	.111 (2.82)	.138 (3.51)
GDDE*	18	19	30	.050 (1.27)	.102 (2.59)	.121 (3.07)
JDDE*	20	19**	32	.041 (1.04)	.095 (2.41)	.112 (2.84)
KDDE*	20	7	28	.038 (.97)	.092 (2.34)	.109 (2.77)
LDDE*	22	19**	34	.032 (.81)	.086 (2.18)	.103 (2.62)
MDDE*	22	7	30	.030 (.76)	.084 (2.13)	.101 (2.57)
NDDE*	24	19**	36	.035 (.89)	.076 (1.93)	.098 (2.49)
PDDE*	24	7	32	.024 (.61)	.073 (1.85)	.095 (2.41)
SDDE*	26	7	34	.019 (.48)	.068 (1.73)	.090 (2.29)
TDDE*	28	7	36	.015 (.38)	.064 (1.63)	.086 (2.18)
WDDE*	30	7	38	.012 (.30)	.061 (1.55)	.083 (2.11)

PIN M27072/94 1/, 2/	Basic wire (either / or may be used) (reference)		Formerly basic wire M16878/4 or M16878/21 (reference)
	M22759	NEMA HP3	
EDDE*		EWBKE*	BKE9
FDDE*	/11-16*	EWBJE*	BJE9
GDDE*	/11-18*	EWBHE*	BHE9
JDDE*	/11-20*	EWBGE*	BGE9
KDDE*	-	EXBGB* EWBGB*	BGB9
LDDE*	/11-22*	EWBFE*	BFE9
MDDE*	-	EXBFB* EWBFB*	BFB9
NDDE*	/11-24*	EWBEE*	BEE9
PDDE*	-	EXBEB* EWBEB*	BEB9
SDDE*	-	EXBDB* EWBDB*	BDB9
TDDE*	/11-28*	EWBCB*	BCB9
WDDE*	-	EXBBB* EWBBB*	BBB9

1/ Part or Identifying Number (PIN).
2/ Asterisks (*) shall be replaced by the appropriate color designator in accordance with MIL-STD-681 and table I. If a stripe or a band is to be added, it shall be in accordance with MIL-DTL-27072.
3/ Asterisks (**) Preferred stranding number for wire size.
4/ Dimensions are in inches.
5/ Metric equivalents are given for information only.

Note: These constructions supersede the shielded single conductor cables of the same construction formerly covered by MIL-DTL-16878.

Marginal notations are not used in this revision to identify changes with respect to the previous issues due to the extensiveness of the changes.

Referenced documents. In addition to MIL-DTL-27072, this document references the following:

NEMA-HP3
SAE-AS22759
MIL-STD-681
MIL-DTL-16878
MIL-DTL-55021/2

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - SH
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 6145-2006-001)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organization and responsibilities can change, please verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

FRL0359
Item #19

FEDERAL SUPPLY CLASS
5940

AS83519/1

NOTICE

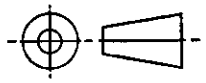
THIS DOCUMENT HAS BEEN TAKEN DIRECTLY FROM U.S. MILITARY SPECIFICATION MIL-S-83519/1C, NOTICE 1 AND CONTAINS ONLY MINOR EDITORIAL AND FORMAT CHANGES REQUIRED TO BRING IT INTO CONFORMANCE WITH THE PUBLISHING REQUIREMENTS OF SAE TECHNICAL STANDARDS. THE INITIAL RELEASE OF THIS DOCUMENT IS INTENDED TO REPLACE MIL-S-83519/1C, NOTICE 1. ANY PART NUMBERS ESTABLISHED BY THE ORIGINAL SPECIFICATION REMAIN UNCHANGED.

THE ORIGINAL MILITARY SPECIFICATION WAS ADOPTED AS AN SAE STANDARD UNDER THE PROVISIONS OF THE SAE TECHNICAL STANDARDS BOARD (TSB) RULES AND REGULATIONS (TSB 001) PERTAINING TO ACCELERATED ADOPTION OF GOVERNMENT SPECIFICATIONS AND STANDARDS. TSB RULES PROVIDE FOR (A) THE PUBLICATION OF PORTIONS OF UNREVISED GOVERNMENT SPECIFICATIONS AND STANDARDS WITHOUT CONSENSUS VOTING AT THE SAE COMMITTEE LEVEL, AND (B) THE USE OF THE EXISTING GOVERNMENT SPECIFICATION OR STANDARD FORMAT.

UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS TECHNICAL REPORT.

ISSUED 1998-07 REAFFIRMED 2003-07

THIRD ANGLE PROJECTION



PREPARED BY SAE SUBCOMMITTEE AE-8C2

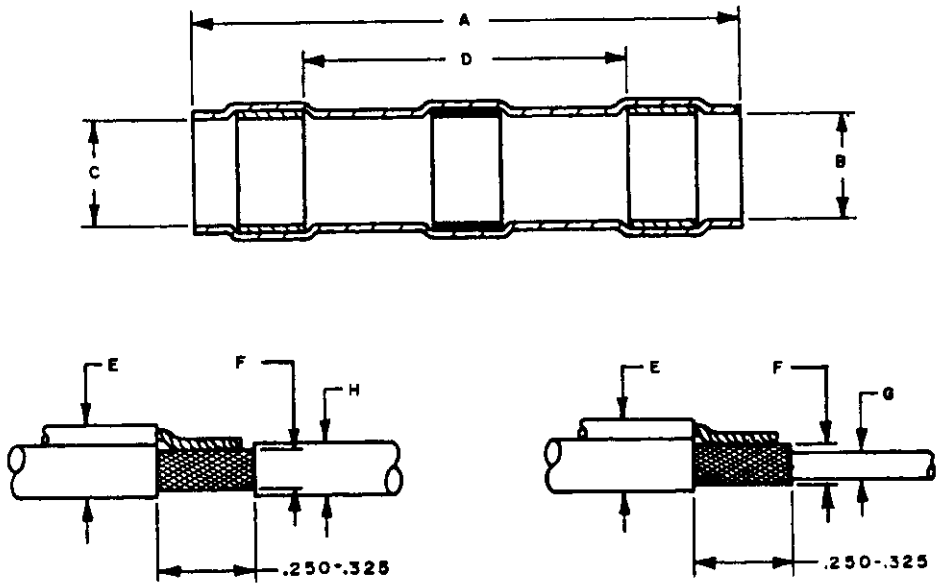
SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SHIELD TERMINATION, SOLDER STYLE, INSULATED, HEAT-SHRINKABLE, ENVIRONMENT RESISTANT FOR CABLES HAVING TIN OR SILVER PLATED SHIELDS (CLASS I)

AS83519/1
SHEET 1 OF 3

THE COMPLETE REQUIREMENTS FOR PROCURNG THE SHIELD TERMNATION DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF MIL-S-83519.



CABLE DIAMETER RANGE AND PREPARATION MEASUREMENTS

TABLE I. CONSTRUCTION DETAILS.

Part No.	Marking code	A ±.07	B Min	C Min	D Min	E Max	F Min	G Min	H Max	Weight Lbs/Nominal
M83519/1-1	S0101X	.650	.075	.105	.325	.105	.035	.020	.075	.00040
M83519/1-2	S0102X	.650	.105	.145	.325	.145	.055	.030	.105	.00050
M83519/1-3	S0103X	.650	.170	.200	.325	.200	.085	.050	.170	.00080
M83519/1-4	S0104X	.750	.235	.255	.325	.255	.130	.070	.235	.00135
M83519/1-5	S0105X	.750	.275	.300	.325	.300	.170	.100	.275	.0015

1/ Dimensions are in inches.

QUALIFICATION: FOR QUALIFICATION PERIODIC TESTING CABLES SHALL BE IN ACCORDANCE WITH TABLE II. THE TERMINATIONS SHALL BE INSTALLED PER THE "ASSEMBLY TO CABLE" PARAGRAPH IN MIL-S-83519 USING THE APPLICABLE CONVECTION AND INFRARED HEAT SOURCES.

MATERIAL: INSULATION SLEEVE: HEAT-SHRINKABLE, TRANSPARENT POLYVINYLIDENE FLUORIDE. SOLDER PREFORM AND FLUX: TYPE Sn 63SRMAP PER QQ-S-571. THERMAL INDICATOR: COLOR TO COLORLESS.

TEMPERATURE RATING: -55° TO +150°C.

COMPATIBLE CABLE JACKETS: THESE TERMINATIONS WILL PROVIDE ENVIRONMENTAL RESISTANCE WHEN INSTALLED ON CABLES CONFORMING TO:

1. MIL-C-27500 JACKET TYPES: .05, 08, 09, 10, 11, 12, 14, 15, 23 AND THEIR DOUBLE JACKET EQUIVALENTS.
2. MIL-C-7078/1, /3, /8, /9, /10

NOTES:

1. WHEN PERFORMING END STRIPPED CABLE SEALING THE BEST RESULTS ARE OBTAINED WHEN THE SMALLEST SIZE TERMINATION FOR THE CABLE/LEAD WIRE COMBINED IS USED. SEALABILITY ON CABLES WITH MORE THAN THREE PRIMARIES OF AWG 22 AND LARGER REQUIRES SPECIAL PRECAUTIONS.

2. THE SPLICE IS RECOMMENDED FOR CABLES RATED AT 105°C, IF SPECIAL PRECAUTIONS ARE TAKEN TO ISOLATE THE HEAT SOURCE FROM THE INSULATION.

TABLE II. QUALIFICATION TEST CABLES.

Part no.	Minimum	Maximum
M83519/1-1	M2750030SB1T23 30TG1T14 30NK1T05	M2750026SB1T23 26TG1T14 26NK1T11
M83519/1-2	24SB1T23 24TG1T14 24NK1T05	18SB1T23 18TG1T14 18NK1T11
M83519/1-3	18SB1T23 18TG1T14 18NK1T05	20SB3T23 20TG3T14 20NK3T11
M83519/1-4	22SB4T23 22TG4T14 22NK4T05	16SB4T23 16TG4T14 16NK4T11
M83519/1-5	18SB4T23 18TG4T14 M2750018NK4T05	16SB6T23 16TG6T14 M2750016NK6T11

TABLE III. SUPERSESSION AND CROSS-REFERENCE.

Military part number	Superseded numbers		
	FSCM 1/ 06090	NAS	MIL-K-81786
M83519/1-1	D-142-83 D-144-25 D-144-15	NAS1744-1 NAS1745-1 NAS1745-13 NAS1746-1	
M83519/1-2	D-100-00 D-142-50 D-144-00 D-144-12	NAS1744-2 NAS1745-2 NAS1745-14 NAS1746-2	M81786/7-1 M81786/8-1
M83519/1-3	D-101-00 D-142-51 D-144-01 D-144-13	NAS1744-3 NAS1745-3 NAS1745-15 NAS1746-3	M81786/7-2 M81786/8-2
M83519/1-4	D-107-00 D-142-56 D-144-46	NAS1745-17 NAS1745-23 NAS1746-9	
M83519/1-5	D-103-00 D-142-52 D-144-02 D-144-14	NAS1744-4 NAS1745-4 NAS1745-16 NAS1746-4	M81786/7-3 M81786/8-3

1/ FSCM is the federal supply code for manufacturers in accordance with federal supply handbooks H4-1 and H4-2.

| QUALIFICATION VALIDATED |
| EVERY 3 YEARS |

QPL-83519-10
21 November 1997
SUPERSEDING
QPL-83519-9
28 March 1997

QUALIFIED PRODUCTS LIST

OF

PRODUCTS QUALIFIED UNDER MILITARY SPECIFICATION

MIL-S-83519

SHIELD TERMINATION, SOLDER STYLE, INSULATED,

HEAT-SHRINKABLE, ENVIRONMENT RESISTANT

GENERAL SPECIFICATION FOR

This list has been prepared for use by or for the Government in the acquisition of products covered by the subject specification and such listing of a product is not intended to and does not connote endorsement of the product by the Department of Defense. All products listed herein have been qualified under the requirements for the product as specified in the latest effective issue of the applicable specification. This list is subject to change without notice; revision or amendment of this list will be issued as necessary. The listing of a product does not release the supplier from compliance with the specification requirements.

THE ACTIVITY RESPONSIBLE FOR THIS QUALIFIED PRODUCTS LIST IS THE NAVAL AIR SYSTEMS COMMAND.

Questions concerning this QPL may be directed to the Hughes Technical Services Company, 6125 E. 21st Street, CNE550, Mail Stop 60, Indianapolis, Indiana 46219-2058, Barry Everton, (317)306-7465 or James Nolte, (317)306-3237.

Manufacturer's full name, CAGE #, office address, and manufacturing plant address are listed at the end of this QPL.

AMSC N/A

FSC 5940

Distribution Statement A. Approved for public release; distribution is unlimited.

GOVERNMENT DESIGNATION	MARKING CODE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S NAME/ TEST & QUAL REF
M83519/1 SHIELD TERMINATION, SOLDER STYLE, INSULATED, HEAT-SHRINKABLE, ENVIRONMENT RESISTANT FOR CABLES HAVING TIN OR SILVER PLATED SHIELDS (CLASS I)			
M83519/1-1	S0101L	S0101L	Phoenix Logistics
1-2	S0102L	S0102L	
1-3	S0103L	S0103L	05732904.AB/11-4-97
1-4	S0104L	S0104L	
1-5	S0105L	S0105L	
M83519/1-1	S0101R	S01-01-R	Raychem Corporation
1-2	S0102R	S01-02-R	
1-3	S0103R	S01-03-R	05720204.AA/07-31-96
1-4	S0104R	S01-04-R	
1-5	S0105R	S01-05-R	
M83519/1-1	S0101S	H-M-1	Sumitomo Electric
1-2	S0102S	H-M-2	
1-3	S0103S	H-M-3	05722704.AA/07-31-96
1-4	S0104S	H-M-4	
1-5	S0105S	H-M-5	
M83519/2 SHIELD TERMINATION, SOLDER STYLE, INSULATED, HEAT-SHRINKABLE, ENVIRONMENT RESISTANT WITH PREINSTALLED LEADS FOR CABLES HAVING TIN OR SILVER PLATED SHIELDS (CLASS I)			
M83519/2-1	S0201L	S0201L	Phoenix Logistics
M83519/2-2	S0202L	S0202L	
M83519/2-3	S0203L	S0203L	05732904.AB/11-4-97
M83519/2-4	S0204L	S0204L	
M83519/2-5	S0205L	S0205L	
M83519/2-6	S0206L	S0206L	
M83519/2-7	S0207L	S0207L	
M83519/2-8	S0208L	S0208L	
M83519/2-9	S0209L	S0209L	
M83519/2-10	S0210L	S0210L	
M83519/2-11	S0211L	S0211L	
M83519/2-12	S0212L	S0212L	
M83519/2-13	S0213L	S0213L	
M83519/2-14	S0214L	S0214L	
M83519/2-15	S0215L	S0215L	
M83519/2-16	S0216L	S0216L	
M83519/2-17	S0217L	S0217L	
M83519/2-18	S0218L	S0218L	
M83519/2-19	S0219L	S0219L	
M83519/2-20	S0220L	S0220L	

GOVERNMENT DESIGNATION	MARKING CODE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S NAME/ TEST & QUAL REF
M83519/2-1	S0201R	S02-01-R	Raychem Corporation
2-2	S0202R	S02-02-R	
2-3	S0203R	S02-03-R	05720204.AA/07-31-96
2-4	S0204R	S02-04-R	
2-5	S0205R	S02-05-R	
2-6	S0206R	S02-06-R	
2-7	S0207R	S02-07-R	
2-8	S0208R	S02-08-R	
2-9	S0209R	S02-09-R	
2-10	S0210R	S02-10-R	
2-11	S0211R	S02-11-R	
2-12	S0212R	S02-12-R	
2-13	S0213R	S02-13-R	
2-14	S0214R	S02-14-R	
2-15	S0215R	S02-15-R	
2-16	S0216R	S02-16-R	
2-17	S0217R	S02-17-R	
2-18	S0218R	S02-18-R	
2-19	S0219R	S02-19-R	
2-20	S0220R	S02-20-R	
M83519/2-1	S0201S	H-ML-1	Sumitomo Electric
2-2	S0202S	H-ML-2	
2-3	S0203S	H-ML-3	05722704.AA/07-31-96
2-4	S0204S	H-ML-4	
2-5	S0205S	H-ML-5	
2-6	S0206S	H-ML-6	
2-7	S0207S	H-ML-7	
2-8	S0208S	H-ML-8	
2-9	S0209S	H-ML-9	
2-10	S0210S	H-ML-10	
2-11	S0211S	H-ML-11	
2-12	S0212S	H-ML-12	
2-13	S0213S	H-ML-13	
2-14	S0214S	H-ML-14	
2-15	S0215S	H-ML-15	
2-16	S0216S	H-ML-16	
2-17	S0217S	H-ML-17	
2-18	S0218S	H-ML-18	
2-19	S0219S	H-ML-19	
2-20	S0220S	H-ML-20	

(CLASS II PRODUCTS)

M83519/1	Sumitomo Electric
M83519/2	Sumitomo Electric

MANUFACTURER'S NAME, OFFICE ADDRESS, PLANT and CAGE CODE

	CAGE Number:
Office: Phoenix Logistics 2202 E. Magnolia Phoenix, AZ 85034 Plant: Phoenix Logistics 2202 E. Magnolia Phoenix, AZ 85034	OSCJ7
Office: Raychem Corporation 300 Constitution Drive Menlo Park, CA 94025-1164 Plant: Raychem Corporation 300 Constitution Drive Menlo Park, CA 94025-1164	06090
Office: Sumitomo Electric Interconnect Products, Inc. Attn: Mr. Bob Walker 155 C-1 Moffett Park Drive Sunnyvale, CA 94089 Plant: Sumitomo Electric Interconnect Products, Inc. 914 Armorlite Drive San Marcos, CA 92069	1JX75